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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,791	09/22/2005	Detlef D Nauck	36-1921	4007

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EXAMINER	
STEVENS, THOMAS H	
ART UNIT	PAPER NUMBER
2121	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,791	NAUCK ET AL.	
	Examiner	Art Unit	
	Thomas H. Stevens	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/17/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-11 were examined.

Specification

2. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Claim Objections

3. The examiner has provided a number of claim deficiencies examples, which could pose a possible antecedent problem; however, the list of deficiencies may not be inclusive.

- Claim 4, line14, "the presence"
- Claim 10, line 22, "the actual"

Applicants should refer to these deficiencies as examples and should initiate all necessary corrections.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> **Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.**

5. Claims 1-11 are rejected under 35 U.S.C. 101 because the claims do not appear tangible nor useful since they fail to correspond to real world events with no specific application.

Furthermore, claims 1-10 appear to be nothing more than software and hence these claims are not considered to be patent eligible for this reason as well.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> **A person shall be entitled to a patent unless –**
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanimura et al. (US Patent 5,890,142; hereafter Tanimura). Tanimura teaches monitoring conditions of a system, which includes a predicting section (abstract).

Claim 1. An analysis system for analyzing data from a monitoring system (title) for monitoring at least one characteristic (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) of a dynamic system (column 2, line 46), said monitoring system (title) providing characteristic data in respect of the dynamic system (column 2, line 46), the dynamic system (column 2, line 46) having at least one known normal state (column 1, line 14), the analysis system comprising: first input means (column 3, line 31)for receiving characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which

figure 2 in Tanimura teaches) from the monitoring system; second input means (column 3, line 31) for receiving confirmation information from an operator (user) when the dynamic system (column 2, line 46) is in a known normal state (column 1, line 14); normality modeling (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) means arranged to derive a normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) in response to received characteristic data and confirmation information, the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) comprising data indicative of one or more known normal states (column 1, line 14) ; prediction generating means arranged to predict future (column 1, line 59) characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) from data in the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50); difference function (difference equation, column 2, line 33) providing means arranged to provide a difference function (difference equation, column 2, line 33), said difference function (difference equation, column 2, line 33) being indicative of an acceptable difference between predicted future (column 1, line 59) characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) and received characteristic data (data, well known); and comparison means arranged to compare (abstract, line 9) predicted future (column 1, line 59) characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the

Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) with received characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) in conjunction with the difference function (difference equation, column 2, line 33), and to produce an abnormality (column 1, line 66) signal if the difference between the predicted future (column 1, line 59) characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) and the received characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) exceeds (exceed the normal ranged into the abnormal range, figure 2) the difference function (difference equation, column 2, line 33).

Claim 2. An analysis system for analyzing data from a monitoring system (title) for monitoring at least one characteristic of a dynamic system (column 2, line 46), said monitoring system (title) providing characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) in respect of the dynamic system (column 2, line 46), the dynamic system (column 2, line 46) having at least one known normal sequence (column 1, line 38)of states, the analysis system comprising: first input means (column 3, line 31) for receiving characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure

7 to which figure 2 in Tanimura teaches) from the monitoring system; second input means (column 3, line 31) for receiving confirmation information from an operator (user) when the dynamic system (column 2, line 46) proceeds according to a known normal sequence (column 1, line 38)of states; normality modeling (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) means arranged to derive a normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) in response to received characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) and confirmation information, the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) comprising data indicative of one or more known normal sequences of states; prediction generating means arranged to predict future (column 1, line 59) characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) from data in the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50); difference function (difference equation, column 2, line 33) providing means arranged to provide a difference function (difference equation, column 2, line 33), said difference function (difference equation, column 2, line 33) being indicative of an acceptable difference between predicted future (column 1, line 59) characteristic data (the disclosure does not provide a definition of a "characteristic"; however, the Office interprets it as a data signal in figure 7 to which figure 2 in Tanimura teaches) and received characteristic data; and comparison means arranged to compare

(abstract, line 9)predicted future (column 1, line 59) characteristic data with received characteristic data in conjunction with the difference function (difference equation, column 2, line 33), and to produce an abnormality (column 1, line 66) signal if the difference between the predicted future (column 1, line 59) characteristic data and the received characteristic data exceeds (exceed the normal ranged into the abnormal range, figure 2) the difference function (difference equation, column 2, line 33).

Claim 3. An analysis system according to claim 1, wherein the difference function (difference equation, column 2, line 33) providing means provides a predetermined difference function (difference equation, column 2, line 33).

Claim 4. An analysis system according to claim 1, wherein the difference function (difference equation, column 2, line 33) providing means comprises difference function (difference equation, column 2, line 33) deriving means for deriving (created by the user) a difference function (difference equation, column 2, line 33) from received characteristic data and the presence or absence of confirmation information.

Claim 5. An analysis system according to claim 1, wherein the difference function (difference equation, column 2, line 33) providing means comprises difference function (difference equation, column 2, line 33) updating means for updating the difference function (difference equation, column 2, line 33) if confirmation information that the

dynamic system (column 2, line 46) is in a normal state (column 1, line 14) is received from an operator (user) in response to an abnormality (column 1, line 66) signal.

Claim 6. An analysis system according to claim 1, wherein the difference function (difference equation, column 2, line 33) providing means uses fuzzy (column 1, line 22) logic.

Claim 7. An analysis system according to claim 1, wherein the normality modeling (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) means comprises normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) updating means for updating the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) in response to received characteristic data and the presence or absence of confirmation information from an operator (user).

Claim 8. An analysis system according to claim 1, wherein the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) is a fuzzy (column 1, line 22) system.

Claim 9. An analysis system according to claim 1, further comprising: abnormality (column 1, line 66) state storage means for storing data indicative of one or more known abnormal states (column 1, line 14); and abnormality (column 1, line 66) comparison means for comparing received characteristic data with data in the abnormality (column

1, line 66) state storage means, and producing an abnormality (column 1, line 66) signal if the received characteristic data matches the data (figure 2, "normal range") in the abnormality (column 1, line 66) state storage means.

Claim 10. A method of analyzing data from a monitoring system (title) monitoring at least one characteristic of a dynamic system (column 2, line 46) and providing characteristic data in respect thereof, the dynamic system (column 2, line 46) having at least one known normal state (column 1, line 14), the method comprising the steps of: receiving characteristic data from the monitoring system; receiving confirmation information from an operator (user) when the dynamic system (column 2, line 46) is in a known normal state (column 1, line 14); deriving a normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) in response to received characteristic data and confirmation information, the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) comprising data indicative of known normal states (column 1, line 14) ; predicting future (column 1, line 59) characteristic data in response to data in the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50); providing a difference function (difference equation, column 2, line 33), said difference function (difference equation, column 2, line 33) being indicative of an acceptable difference between predicted future (column 1, line 59) characteristic data and received characteristic data; comparing predicted future (column 1, line 59) characteristic data with actual received characteristic data in conjunction with the difference function (difference equation,

column 2, line 33); and producing an abnormality (column 1, line 66) signal if the difference between the predicted future (column 1, line 59) characteristic data and the actual received characteristic data exceeds (exceed the normal ranged into the abnormal range, figure 2) the difference function (difference equation, column 2, line 33).

Claim 11. A method of analyzing data from a monitoring system (title)monitoring at least one characteristic of a dynamic system (column 2, line 46) and providing characteristic data in respect thereof, the dynamic system (column 2, line 46) having at least one known normal sequence (column 1, line 38) of states, the method comprising the steps of: receiving characteristic data from the monitoring system; receiving confirmation information from an operator (user) when the dynamic system (column 2, line 46) proceeds according to a known normal sequence (column 1, line 38)of states; deriving a normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) in response to received characteristic data and confirmation information, the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50) comprising data indicative of known normal sequences of states; predicting future (column 1, line 59) characteristic data in response to data in the normality model (normality apparatus test of normal or abnormal conditions, column 1, lines 48-50); providing a difference function (difference equation, column 2, line 33), said difference function (difference equation, column 2, line 33) being indicative of an acceptable difference between predicted future (column 1, line 59) characteristic data

and received characteristic data; comparing predicted future (column 1, line 59) characteristic data with actual received characteristic data in conjunction with the difference function (difference equation, column 2, line 33); and producing an abnormality (column 1, line 66) signal if the difference between the predicted future (column 1, line 59) characteristic data and the actual received characteristic data exceeds (exceed the normal ranged into the abnormal range, figure 2) the difference function (difference equation, column 2, line 33).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure:

- Moulds et al., teaches a predictive control of a controlled dynamic system having conventional feedback
- McCowan et al. teaches a method for performing system monitoring and diagnostics is disclosed
- Qin teaches a method for automatically tuning a fuzzy logic process
- Ioannou et al. teaches adjusted control variations
- Carter et al. teaches a product data from a manufacturing process is analyzed using techniques adapted from the study of chaos

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (7:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Anthony Knight 571-272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

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